

13. *Struthiocephalellus*: A New Deinocephalian. By LIEUWE DIRK
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(With 3 text-figures.)

In the collection of the South African Museum there is a specimen (S.A.M. 5006) collected by Houghton in 1916 on Abrahamskraal, Prince Albert, which according to Rossouw (4) is Low *Tapinocephalus* zone. This specimen consists of much of the skeleton of a small Tapinocephalian. There is preserved: much of a distorted and weathered skull in two parts, viz. a maxillary and an occipital part not in contact; parts of the vertebral column, part of a scapula, most of a humerus, the proximal end of an ulna; the greater part of a distorted pelvis, a femur and the proximal end of a tibia, together with other fragments.

The bones of the girdles and limbs are being described in a forthcoming paper on these elements based on all the Deinocephalian material in the Museum.

The skull (Figs. 1-2) is about half the size of that of *Struthiocephalus whaitsi*. The pachyostosis is weak so that the postorbital bar is relatively slender and the posttemporal opening roomy. The occiput is fairly upright and the quadrate not shifted very far anteriorly. The snout is moderately high.

Owing to the distortion and the lack of contact between the maxillary and occipital pieces the two figures I give here are reconstructions and represent orthoprojections of the dorsal and ventral surfaces projected on to the plane in which the alveolar borders of the maxillaries lie.

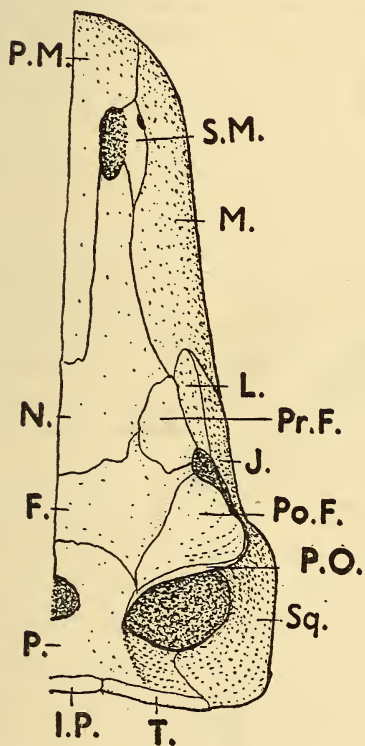
A comparison of these figures with those given for *Struthiocephalus whaitsi* (2) shows that the present skull, apart from its being only a half as large, is very similar in general structure. The chief points of difference are: Little pachyostosis, no fronto-nasal boss, slender postorbital bar, more upright occiput and less forward displacement of the quadrate.

These points of difference might very well be thought to merely indicate juvenility in the present skull. However, in our collection I (2) have described a juvenile skull (S.A.M. 11493) of *Struthiocephalus whaitsi* which is just as long as that of two adult skulls, but its youth is indicated by the fact that the teeth are just beginning to erupt. Now in the present skull (S.A.M. 5006) there is a full set of sixteen teeth which would tend to show that although so much smaller it cannot be younger than the juvenile skull (S.A.M. 11493) of *Struthiocephalus*.

Unfortunately no crowns of any of the anterior teeth are preserved, but judging from the nature of the roots it does not appear probable that in the

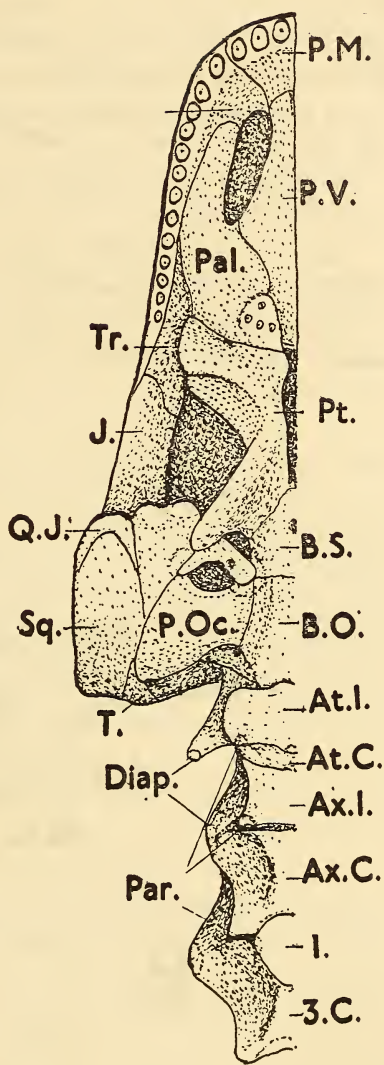
anterior teeth the crowns had the usual Tapinocephalian structure consisting of talon and horse-shoe-shaped attrition surface, but rather that they were simple pointed teeth.

Fig. 1.



Dorsal aspect of the skull of *Struthiocephalellus parvus*. S.A.M. 5006. Abrahamskraal, Prince Albert. ($\times \frac{1}{3}$.) This as well as Fig. 2, is a reconstructed projection by pantograph on to the plane in which the maxillary alveolar borders lie. F.—frontal; I.P.—interparietal; J.—jugal; L.—lacrimal; M.—maxilla; N.—nasal; P.—parietal; Po.F.—postfrontal; Pr.F.—prefrontal; P.M.—premaxilla; P.O.—postorbital; S.M.—septomaxilla; Sq.—squamosal; T.—tabular.

Fig. 2.



Ventral aspect of the skull and the first three cervicals of *Struthiocephalellus parvus*. ($\times \frac{1}{3}$.) At.C.—atlantal centrum; At.I.—atlantal intercentrum; Ax.C.—axial centrum; Ax.I.—axial intercentrum; B.O.—basioccipital; B.S.—basisphenoid; Diap.—diapophysis; I.—third intercentrum; Pal.—palatine; Par.—parapophysis; P.Oc.—paroccipital; Pt.—pterygoid; P.V.—prevomer (vomer); Q.—quadratojugal; Q.J.—quadratojugal; Tr.—transversum; 3 C.—centrum of third vertebra.

The crowns in some of the posterior teeth are imperfectly preserved. Here the crowns appear spatulate in outline and labio-lingually compressed. In one or two of the rear crowns there appears to have been a stronger central cusp with a weaker posterior and anterior cusp, strongly reminiscent of those known in *Agnosaurus* (1) and the Russian *Rhopalodon*.

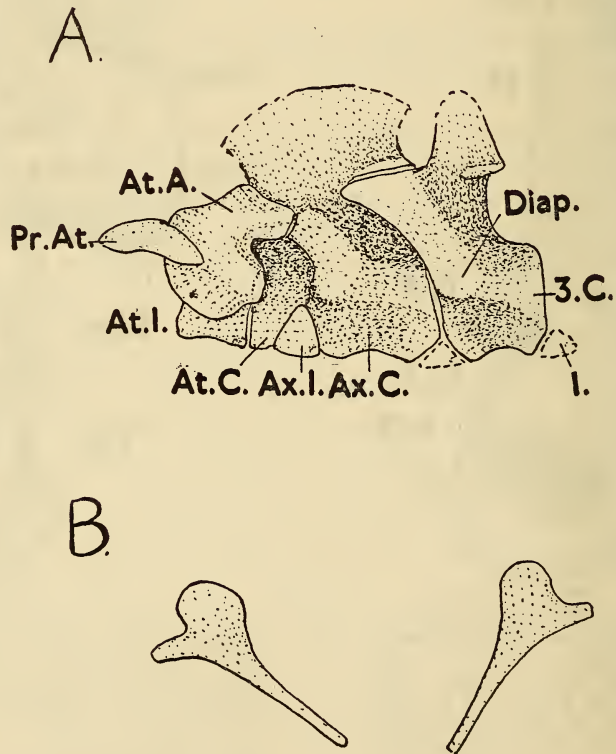
In view of the condition in *Agnosaurus* the possibility that the spatulate rear teeth may represent "milk" teeth cannot be excluded.

A series of three cervical vertebrae is preserved in articulation with the occipital condyle.

The cervical vertebrae (Figs. 2 and 3) are very similar to those of *Moschops* and *Mochognathus* (3) and to those of the Synapsids generally.

The proatlas is a stout bone; in lateral view its outline is that of a shallow segment; anteriorly it has a ventral facet for articulation with the

Fig. 3.



A. Lateral view of the first three cervical vertebrae of *Struthiocephalellus parvus*. ($\times \frac{1}{3}$.) At.A.—atlantal arch; Pr.At.—proatlas.
 B. Lateral view of left and right atlantal ribs. ($\times \frac{1}{3}$.)

exoccipital and a similar facet posteriorly articulates with the atlantal prezygapophysis.

The atlas is temnospondylous with a paired neural arch resting on a large atlantal intercentrum and an odontoid-like pleurocentrum. The arch is of complex shape; dorso-posteriorly a postzygapophysis articulates with the prezygapophysis of the axis; dorso-anteriorly a prezygapophysis gives articulation to the proatlas; postero-laterally there is a strong diapophysial process carrying a facet for the articulation of the tuberculum of the atlantal rib; near its antero-ventral edge there is a small vertebrarterialis foramen; dorsally the two halves do not meet to form a spine.

The atlantal intercentrum is large; it carries a posteriorly directed parapophysial facet on its postero-lateral edge for the capitulum of the atlantal rib.

The atlantal pleurocentrum is mostly covered by the atlantal rib, but is probably as that described in *Moschops* and *Mochognathus*.

The axis has the two halves of the neural arch fused to each other and to the pleurocentrum to form a typical holospondylous vertebra.

The spine is comb-shaped; anteriorly an upwardly directed prezygapophysial facet articulates with the postzygapophysis of the atlantal arch; postero-dorsally horizontal upwardly facing postzygapophyses articulate with the prezygapophysis of the succeeding vertebra; well below the junction of arch and centrum there is situated a strong process carrying the diapophysial facet for the tuberculum of the axial rib, whose capitulum articulates with a parapophysial facet situated on the postero-lateral corner of the axial intercentrum.

The axial centrum is laterally excavated below the diapophysis and ventrally has a sharp keel.

The third intercentrum is smaller than its predecessors.

The third cervical has a bluntly pointed spine and its centrum is deeply excavated below the diapophysis so that ventrally it shows a sharp keel.

The atlantal rib (Fig. 3 B) is preserved on both sides; it is a greatly flattened small bone with a weak shaft, a greatly expanded leaflike tuberculum and a much weaker capitulum.

This specimen in size comes very near to *Moschosaurus* and *Agnosaurus* and agrees with these two forms in having the pachyostosis little developed, the quadrate not greatly forwardly displaced and the skull height not greatly reduced. In the structure of its palate and the dorsal cranial surface it shows considerable similarity to the much larger *Struthiocephalus* from which it differs however in the nature of its dentition and in the structure of the girdles and limb-bones.

For this form I propose the name—

Struthiocephalellus parvus. Gen. et Sp. Nov. Holotype: S.A.M. 5006. Skull, vertebrae, girdle- and limb-bones. Abrahamskraal, Prince Albert. Low *Tapinocephalus* zone.

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